

JAN 19 2006

MODIFIED PTO/SB/08 (08-00)

Approved for use through 10/31/2002. OMB 0851-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date Submitted: January 18, 2006

(use as many sheets as necessary)

Sheet 1 of 1

## Complete if Known

Application Number 10/873,647  
Filing Date 09/30/2003  
First Named Inventor A. Robin POOLE  
Group Art Unit 1646  
Examiner Name Unassigned  
Attorney Docket Number 079328-0107

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	D1	6,132,976		POOLE et al.	10-17-2000	

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
<i>hse</i>	D2	EP	0 916 395	A2	Helsinn Chemical Ireland Limited	05-19-1999		

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
<i>hse</i>	D3	BILLINGHURST, R.C. et al., "Enhanced Cleavage of Type II Collagen by Collagenases in Osteoarthritic Articular Cartilage," J. Clin. Invest., Vol. 99, No. 7, pp. 1534-45 (1997).	
	D4	HAYASHI et al., "Change of Collagen Types in Pathological Articular Cartilages," EMBASE, Elsevier, Vol. 49, No. 5, Abstract (1999). <i>Source, i.e. journal?</i>	

Examiner Signature

*hse* 4/27/06

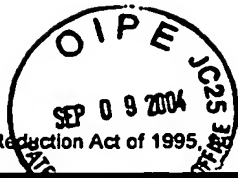
Date Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that Issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

WASH\_1529371.1



MODIFIED PTO/SB/08 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>Substitute Form 1469 PTO</b> <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> Date Submitted: September 9, 2004 (use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	10/673,647
Sheet 1 of 1				Filing Date	9/30/2003
				First Named Inventor	A. Robin Poole
				Group Art Unit	Unassigned
				Examiner Name	Unassigned
				Attorney Docket Number	079328-0107

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
APR	C1	HOLLANDER, A. P., et al., "Damage to Type II Collagen in Aging and Osteoarthritis Starts at the Articular Surface, Originates Around Chondrocytes, and Extends into the Cartilage with Progressive Degeneration", J. Clin. Invest., vol. 96, pp. 2859-2869 (1995).	

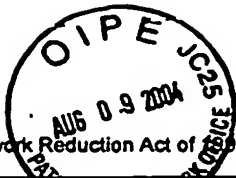
Examiner Signature		Date Considered	
--------------------	---	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 18 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



MODIFIED PTO/SB/08 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for PTO Form 449B/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

Date Submitted: August 9, 2004

(use as many sheets as necessary)

**Complete if Known**

Application Number	10/673,647
Filing Date	09/30/2003
First Named Inventor	A. Robin POOLE
Group Art Unit	1646
Examiner Name	Unassigned
Attorney Docket Number	079328-0107

Sheet 1 of 1

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
<i>AS</i>	A1	POOLE, "Biochemical/Immunochemical Biomarkers of Osteoarthritis: Utility For Prediction of Incident or Progressive Osteoarthritis," Rheum Disease Clinic of North America, Vol. 29, No. 4, November 2003, pp. 803-818.	
<i>AS</i>	A2	OTTERNESS et al., "An Analysis of 14 Molecular Markers For Monitoring Osteoarthritis: Segregation of The Markers Into Clusters And Distinguishing Osteoarthritis At Baseline," Osteoarthritis And Cartilage, OsteoArthritis Research Society International, Vol. 8, No. 3, 2000, pp. 180-185.	

Examiner  
Signature*AS* 4/21/04Date  
Considered

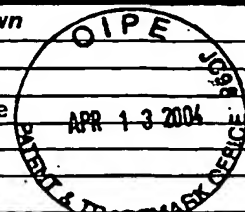
\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 18 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO				Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  Date Submitted: April 12, 2004  (use as many sheets as necessary)				Application Number	10/673,647
				Filing Date	09/30/2003
				First Named Inventor	A. Robin Poole
				Group Art Unit	Unknown
				Examiner Name	Unknown
Attorney Docket Number	079328-0107				



## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	A1	<del>BILLINGHURST, R.C. et al., "Enhanced Cleavage of Type II Collagen by Collagenases in Osteoarthritic Articular Cartilage," J. Clin. Invest., vol. 99, no. 7, pp. 1634-45 (1997).</del> Duplicate	
SPZ	A2	DAHLBERG, L. et al., "Selective Enhancement of Collagenase-Mediated Cleavage of Resident Type II Collagen In Cultured Osteoarthritic Cartilage and Arrest with a Synthetic Inhibitor that Spares Collagenase 1 (Matrix Metalloproteinase 1)," <i>Arthritis Rheum.</i> , vol. 43, no. 3, pp. 673-82 (2000).	
SPZ	A3	DODGE, G.R. and POOLE, A.R., "Immunohistochemical Detection and Immunochemical Analysis of Tyupe II Collagen Degradation in Human Normal, Rheumatoid, and Osteoarthritic Articular Cartilages and In Explants of Bovine Articular Cartilage Cultured with Interleukin 1," <i>J. Clin. Invest.</i> , vol. 83; pp. 647-61 (1989).	
SPZ	A4	GARNERO P. et al., "Molecular Basis and Clinical Use of Biochemical Markers of Bone, Cartilage, and Synovium in Joint Diseases," <i>Arthritis Rheum.</i> , vol. 43, no. 5, pp. 673-82 (2000).	

Examiner Signature	<i>SPZ</i> 4/27/02	Date Considered	
--------------------	--------------------	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

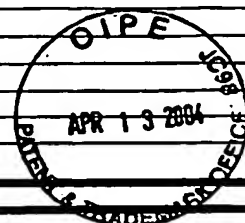
<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, PO Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  Date Submitted: April 12, 2004  (use as many sheets as necessary)		Application Number	10/673,847
		Filing Date	09/30/2003
		First Named Inventor	A. Robin Poole
		Group Art Unit	Unknown
		Examiner Name	Unknown
Sheet	2	of	2
		Attorney Docket Number	079328-0107



## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	A5	<del>HENDERSON, B. EDWARDS, J.C.W., PETTIPHER, E.R. (eds), Mechanisms and Models in Rheumatoid Arthritis, London, Academic Press, (1995)</del> <i>Book not enclosed</i>	
<i>LSR</i>	A6	HOLLANDER, A.P. et al., "Increased Damage to Type II Collagen in Osteoarthritic Articular Cartilage Detected by a New Immunoassay," <i>J. Clin. Invest.</i> , vol. 93, pp. 1722-1732 (1994).	
<i>LSR</i>	A7	In J.C. STEVENSON, RE. Lindsay, (eds), "Biological Markers of Bone Turnover in Osteoporosis," Osteoporosis, pp. 117-136, London, Chapman and Hall, (1998) <i>Delmas and Garnero</i>	
<i>LSR</i>	A8	POOLE A.R., AND HOWELL D.S., Etiopathogenesis of Osteoarthritis. In: <i>Diagnosis and Medical/Surgical Management</i> (3 <sup>rd</sup> ed.), Moskowitz, R.W. et al. (Eds), pp. 29-37, Philadelphia, Saunders Company (2001)	
<i>LSR</i>	A9	WU, W. et al., "Sites of Collagenase Cleavage and Denaturation of Type II Collagen in Aging and Osteoarthritic Articular Cartilage and Their Relationship to the Distribution of Matrix Metalloproteinase 1 and Matrix Mettaloproteinase 13," <i>Arthritis Rheum.</i> , vol. 46, no.8, pp. 2087-2094 (2002)	

Examiner Signature	<i>LSR</i> 4/27/04	Date Considered	
--------------------	--------------------	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 18 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, PO Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22313-1450.